1:Spier E-5 (1929-1932) 1933 NT15 River Yumans NT15
Maricopa

with deerskin." The same substitute for breechclouts was observed by Bartlett, who in the summer of 1852 remarked that "the dress of the Coco-Maricopa and Pimos is the same. . . . . The men in general go naked, except the breechclout. A few, however, are provided with their native blankets of large size, which they fold and throw over their shoulders in the manner of the Mexicans. Some fasten them around their waists in graceful folds, letting the ends fall to their knees; then drawing a cord between their legs and attaching it to their waists, their garment resembles a capacious pair of pantaloons. I suppose that all are provided with cotton blankets; but, owing to the almost incessant heat of the day, they seldom wear them. At night, when cool, these constitute their sole covering."[3]

It is doubtful that the men ever went wholly naked.[4] While none of my informants had witnessed truly aboriginal conditions, Last Star believed that in earlier times, say in his father's day, men never went without at least a breechclout, not even old men.

It must be borne in mind that mid-winter on the Gila is quite cold. Yet the Maricopa did not carry torches to warm themselves in the manner of the lower Colorado tribes, as attested by Alarcon and other Spanish writers.[5] When travelling, the Maricopa would scrape ashes into a hole, covering these with dirt, to lie on for warmth.

The man's breechclout was a woven strip of willow bark, less than a foot wide, hung fore and aft over a belt. The pendent flaps hung to the knees in front, to the upper calf behind. Some had only the central portion woven, that which passes between the legs, and the ends hanging in fringes. According to Kutox the clout was woven on a horizontal loom: a continuous warp passed to and fro over the loom bars, with willow strings as wefts twined across at intervals of one and a half inches. Last Star's information is rather to be trusted: that the strip was woven of bark strands in checkerboard weave, without the use of a loom. A specimen he made illustrates this (Plate IV, *a*).[6] The belt was

[3] Bolton, *Anza's California Expeditions*, IV, 49, 52, 53; Bartlett, *Personal Narrative*, II, 229; cf. I, 452.

[4] Cf. the Yuma (Forde, *Yuma Ethnography*, p. 92).

[5] Sedelmair implied that the custom was in vogue on the several rivers he traversed in 1744, among them the Gila, but one cannot be certain that he was *not generalizing from what he saw on the Colorado River* (Sedelmair, p. 851).

[6] Peabody Museum, Yale University, No. 19077.

1:Spier E-5 (1929-1932) 1933 NT15 River Yumans NT15
Maricopa
Halchidhoma

belts before mentioned [woven bands, three or four inches broad], but are generally kept in place by simply tucking one end in."[11] Font, as we noted above, saw skin skirts in use as well.

Robes used in winter were rabbit skin capes and cotton blankets. The latter were never cut nor woven with a slit, poncho-like. Bartlett and Font mention only cotton and woolen blankets. The rabbit skin cape (kwĭlŭ'l), made by both Maricopa and Halchidhoma, was rectangular and came only to the waist or a little below. (When plenty of skins were available, this was made longer and served as a blanket as well. But such blankets were seldom used; pelts never.) The rabbit skins were cut spirally into strips, which were wound along thin sticks so as to dry as spiral cords. Old women made these capes. The worker tied one end of a rolled willow bark cord to her toe and the other end around her waist, to serve as a taut foundation for the fabric. One end of each skin strip was lapped over this cord: when the strip was long, it was doubled back to pass over the cord again. These strips were then fastened by a second cord, set close to the foundation cord, which was wound once around each successive strip and its short lapped end. At intervals of a hand's span other cords were twined through the pendent strips parallel to the foundation cord.

A "woven" (probably twined) willow bark robe was also worn, according to Kutox. Last Star emphatically denied its existence. It was rectangular, not square; a span in length, and hung almost to the ankles behind. Loose ends of the fabric tied together in front of the breast served to hold it on, no belt being used. Those of men and women were alike.

Little children wore nothing. When they were seven to nine years old, the breechclout and bark skirt were adopted. Somewhat earlier a little rabbit skin blanket might be tied about their middles, but such covering was given girls rather than boys. Bartlett remarked, "Although the men and boys go naked, I never saw a girl, however young, without clothes around its hips similar to those worn by the women."[12]

Sandals were worn by both sexes only when travelling. At

[11] Bartlett, *Personal Narrative*, II, 224, 228

[12] *Ibid.*, p. 231.

1:Spier E-5 (1929-1932) 1933 NT15 River Yumans NT15
Maricopa
Halchidhoma
Kavelt cadom

323 designs drawn by Mrs. Redbird (*c* was a very common design).
531 Modern pieces bearing designs not wholly divergent from the old
[178] are shown in Plate VII, *f–h*, and Figure 7, *d*, *e*. These designs have always been copied from those on red-on-buff ware sherds
[172] taken from the ancient ruins in the vicinity. While it seems quite possible that the pottery of the Yumans and their neighbors is derived from this ancient buff ware,[4] the designs on Maricopa could not be cited to prove the case since their designs are deliberate copies, just as modern Hopi pottery is deliberately copied from that of ancient Awatobi. Designs had no names.
[424] Nor was there ownership of designs, although women had their favorites, so that who made a vessel could be told by the kind of modeling and the design. This is borne out by several examples secured; among them the pots of one woman and her daughter-in-law, who always work together, commonly have seven units of design distributed over the surface.

WEAVING

171 The material culture of the Maricopa differed from that of the
● 286 lower Colorado tribes in the presence of weaving. This is a point they are pridefully fond of stressing. As a matter of fact, the amount of cloth woven was probably not very great, in no degree rivaling the productivity of Pueblo looms. Their fabrics were as simple as their looms were crude.

Not only the Maricopa, but the Kaveltcadom (the advance-guard Halchidhoma of Gila Bend) are credited with weaving. They learned the art from the Maricopa some years before Kutox's birth in 1847, he thought. Kutox was doubtful that the Halchidhoma proper wove cloth while still in their home on the Colorado. If they had, he should have known it, since they left there only twenty years before he was born. This agrees with what we know of other river Yumans, that they did not weave cloth.[5] The presence of the art among the Maricopa accords, on the other hand, with their proximity to the weaving Pima.

[4] Kroeber, *Handbook*, pp. 73, 823.

[5] Except the Yuma, who wove fabrics of willowbark or cotton on looms of Pima type (Forde, *Yuma Ethnography*, p. 126).

1:Spier E-5 (1929-1932) 1933 NT15 River Yumans NT15
Maricopa

The loom products had little variety: coarse, thin cotton blankets of small size, a skirt for a girl during her puberty rite, men's belts, old men's headbands, and the binding bands for cradles were all they had. The cotton blankets served as bedding: they may sometimes have been used to draw over the shoulders but they were certainly not a part of the ordinary costume. The poncho was unknown and cloth was never deliberately cut to make a garment. All of the articles were made of cotton yarn. The blankets were plain, except such as may have had a decorated selvage; the narrow bands invariably had designs.

The weaving art is now moribund, only cradle bands being made and but few of these. Hence it is difficult to get wholly adequate information. With the aid of a make-shift loom we attempted to get a description of blanket weaving from old Kutox, but he, nearly blind and with crippled fingers, could not demonstrate at crucial points. Last Star, who had himself never seen weaving, gave what must be an essentially correct account of blanket weaving. On the other hand, thoroughly adequate information on the making of cradle bands was had from Mary Juan, a young and skillful weaver, who wove at my request.

Bartlett's information on Pima and Maricopa confirms mine.

"Cotton is raised by them, which they spin and weave. Their only manufactures consist of blankets of various textures and sizes; a heavy cloth of the same material used by the women to put around their loins; and an article from three to four inches wide, used as a band for the head, or a girdle for the waist. The blankets are woven with large threads, slightly twisted and without any nap. They are made of white cotton, and are without ornament of colors or figures, save a narrow selvage of buff. . . . . The operation, of course, progresses slowly; and from the length of time consumed in spinning and weaving, they set a high price upon their blankets, asking for these ten or twelve dollars in money, or a new woolen blanket of equal size. The weaving is generally done by the old men."

Bartlett's illustration shows the weaver sitting on the finished portion of the blanket he has under way.[6]

Loom products were considered quite valuable, especially the cotton blankets. These were about the size of our small bed

[6] Bartlett, *Personal Narrative*, II, 224–26.

1:Spier E-5 (1929-1932) 1933 NT15 River Yumans NT15
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286 blankets, just large enough barely to cover a single person. Larger ones took too long to weave. A blanket of the usual size was three weeks in the making; preparing the cotton, spinning the needed amount of yarn, and completing the weaving. Blankets were traded to the Papago for horses. According to my information the Papago did not weave, but Curtis gives evidence that they did.[7] The rate of exchange in the middle of the last century was a single blanket for a poor horse, two for a good one.[8] This furnishes some index of their high value, for the Maricopa were so poor in horses, that they still thought nothing of going long distances afoot and considered even a relatively poor horse a worthwhile acquisition. The only horses they had were those [23] gotten by such trade. The Papago, on the other hand, were relatively rich in horses since they were situated much nearer the Mexican villages.

Weaving was properly man's work. There was, however, a division of labor such that preparing the cotton (ginning) was done by women alone, both sexes spun yarn, while weaving was solely in the hands of old men. When cloth and blankets became avail- [177] able from traders, the old art waned and man's part in it lapsed entirely. Nowadays only women weave, making only cradle bands as part of their construction of cradles. Only commercial yarns are now used. Some knowledge still persists among the older men, however: Kutox, who had never woven, demonstrated with a spindle, exhibiting the typical draft motion and smoothing the yarn like an accomplished spinner. Both women and men formerly wove bands, according to Hrdlička's information of 1902 and 1905.[9] While the objects he discussed in his brief account were cradle bands, it is conceivable that his informants were implying that women wove cradle bands while men made their own belts and headbands, if they were not in fact referring only to the period of transition. More serious is the implication of his statement that an old Maricopa made several blankets in

[7] Curtis, II, 6, 82, 111, 116.

[8] The same rate prevailed among the Pima (Russell, *Pima Indians*, p. 149).

[9] Hrdlička, *Maricopa Weaving*.

1:Spier E-5 (1929-1932) 1933 NT15 River Yumans NT15
Maricopa

his youth. It was, by my evidence, an old man's art, yet this observation that a young man wove or assisted may be true.

Cotton was alone used in weaving. Such possible substitutes as mountain sheep or dog hair were not used. Nor was sheep wool used since the advent of the whites: so far as I know, the Maricopa neither own sheep now nor had them formerly. The cotton cultivated in earlier days was white, not brown; growing on bushes waist-high or little more, and not like the man-high bushes of modern varieties of cotton grown in this district. It proved impossible to obtain any specimens of ancient cotton: it has entirely disappeared. Hrdlička observed (1905):

> According to information obtained from an old Maricopa, about forty years ago the people of his tribe planted native cotton, with which the men wove large decorated blankets.

They ginned the cotton by first beating it with a little stick. Then, spreading it on a flat stone, they rolled a smooth arrowweed across it to remove the seeds. This lap was layed aside; then others were similarly prepared and laid on the first. This was women's work alone. Day after day was spent in preparation until the necessary amount was accumulated.

The cleaned cotton was then spread on a smooth spot on the ground, over which clean sand had been sprinkled. A scraped arrowweed, about the size of an arrow, was strung to form a taut little bow. The bowstring was held close above the cotton and then plucked. The "tooth" of the string caught up the loose fibers; its vibration wrapped them into a compact roll around the string. This was then pulled off the string to serve as a sliver ready for spinning.[10] The first step was to roll the sliver into a loose yarn between palm and thigh.

[10] The cotton plucking bow must have had an interesting history in America: its ultimate source was Asia. My Maricopa informant ascribed its use to the Pima as well. He did not know whether the Papago had it. Doubtless they had, for, farther south Dr. Ralph Beals found it in 1931 in use among the Mayo (near the Rio Mayo and Navajoa, Sonora) for plucking wool fibers for spinning. The source for these tribes must have been the missions of northern Mexico. It occurs in South America, where Nordenskiöld records its distribution through the southern Amazon basin and southward. He writes: "We have here a cultural element that the Indians probably got from the Portuguese, presumably, as in the case of

1:Spier E-5 (1929-1932) 1933 NT15 River Yumans NT15
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Cords for other purposes than weaving were always slender, perhaps one-eighth inch in diameter. The yarn was rolled into balls. 283

Dyed yarns were employed for bands and for the decorative selvage of blankets. For a bright red, the yarn was boiled with the root of a mountain plant, called itu'tă (now used by the Pima to dye willow twigs for baskets). It is similarly boiled with clays found in the mountains to obtain a dull red, dull black, or a faded orange. The red clay is that now used for painting pottery. No mordant was mentioned. 283 386

The Maricopa loom was horizontal, unlike that of the Pueblos and Navaho, but identical with Pima, Papago, and Opata. It consisted of four stakes driven into the ground, to which two warp bars were tied, parallel to each other and horizontal. The warp was laid directly over these bars. This was used not only for the larger fabrics, blankets, but also for the various belts and bands. 286 [171]

The belt loom was also known but perhaps not much used. Somewhat doubtfully I record Kutox's statement that it was used only after the advent of the Halchidhoma from the Colorado (*ca.* 1828). In this loom, the proximal end of the warps were tied to the belt of the weaver seated on the ground, the distal end to a convenient post at about the same height. This, of course, was used only for weaving narrow bands. No belt stick[22] was used.

The weaving of a cradle band on the regular horizontal type of loom was observed. Two pairs of stakes, set a foot apart, were driven into the ground at a distance equal to that desired for the length of the band. A stout arrowweed was tied horizontally on the outside of each pair, some nine inches above the ground, to serve as the warp bar. One end of the warp was tied to one warp bar at one side so that the knot lay at the bottom of the bar. The warp was carried under the opposite bar, and back over the top, thence to the first bar. It was passed over the bars always in this fashion: under the bar and back over the top. This resulted in the warps crossing each other to form a figure-eight (Pl. VIII).

[22] As at Zuñi (Spier, *Zuñi Weaving Technique*, p. 77).

1:Spier E-5 (1929-1932) 1933 NT15 River Yumans NT15
Maricopa

286 Warps of several colors were used. As a warp of a new color was needed, the warp already on the loom was cut off near one of the bars, and the new warp tied to it by a double knot. The whole set of warps then merely formed one continuous cord. The warp was kept very tight, and carefully laid in order, as it was being strung on the warp bars. Great care was exercised to have the tension of each strand of warp exactly that of its fellows. Finally the end of the warp was tied to the bar opposite that from which warping was begun. This resulted in an odd number of warp strands.

Two slender arrowweed sticks (Fig. 8, *A* and *B*) were inserted in the ends of the figure-eight, worked toward the end of the loom at which the weaver desired to begin, and drawn together

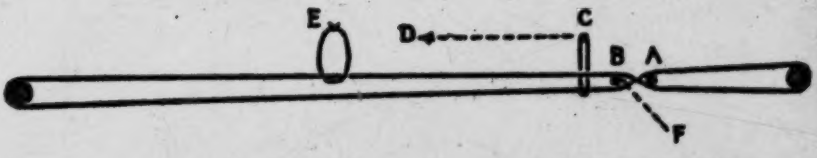


FIG. 8.—Diagrammatic sketch of the warp with healds in place

as tightly as possible, so as to arrange and lock the sheds carefully. Another arrowweed rod (*C*) to serve as a heald was tied by a loose, continuous string to every lower warp just beyond the first pair of sticks. Heald *C* was then about four inches above the warps (Pl. IX, *A*). These long loops were then loosely bound about and to the heald stick *C* with a cord, so they could be handled as a unit. The heald *C* was moved some distance away from the weaver (to point *D*, Fig. 8), and the upper and lower sheds separated between *D* and *B*. A cord (*E*) was then tied as a very loose loop around the warps comprising the upper shed. (This cord was formed by doubling a length of string, rolling the two halves separately but simultaneously up the thigh under the palm, and rolling one around the other by the return movement of the palm down the thigh. The result was a quadrupled rolled cord.) Two hours were occupied in preparing the loom.

The bands as fabrics fall in the class "warp weaving" ("warp face"); that is, the weft is only filler, almost wholly covered by

1:Spier E-5 (1929-1932) 1933 NT15 River Yumans NT15
Maricopa

286
516

PLATE VIII

WEAVING: WARPING THE LOOM

1:Spier E-5 (1929-1932) 1933 NT15 River Yumans NT15
Maricopa

the warps. Hence the designs are in colors provided by the warp strands. On the occasion under description, the weft was common white cord. This was wound about the fingers to form little hanks, bound about by the free end, which was fastened in a slip knot (Fig. 9). Three of these were prepared, and the loose ends of the three tied in a single knot. 286

To begin weaving, one of these hanks was inserted between the upper and lower sets of warps as close as possible to their point of crossing (at *F*, Fig. 8), and drawn in until the knot uniting the three hanks lay at the center of the warps. It was worked close into the point of crossing by sawing it back and forth, and then ramming it home with the side of the hand. The lower set of warps was raised by the heald rod *C*, and the shed fully opened

FIG. 9.—Hank of weft yarn

by pressing into the point of crossing with the side of the hand. The sticks *A* and *B* were then removed. One of the two hanks on one side was then inserted through the open shed in the same direction as the first to form the second pick. Stick *A* was then replaced to even up the first pick. The loop *E* was used to raise the other set of warps. The second hank was then picked back. The lower shed was raised and the third hank picked in. The other shed was again raised by the loop and the first hank picked in. In this way there were always two hanks lying on one side of the warps (Pl. IX, *B* and Fig. 10). As lengths of weft were loosened from the hanks, they were temporarily tied again with a slip knot.

It was difficult to get the warps properly arranged while inserting the first few picks. Although the woman I observed was an expert weaver, and showed all the deftness of long familiarity with the process, each time a new shed was formed, the then lower set of warps had to be shaken and pulled through the upper set

Kroeber E-5 (1929-1932) 1933 NT15 River Yumans NT15
Maricopa

286 in a clumsy fashion.[23] Further picks were not driven home with the hand nor with a weaving sword, but simply by grasping the upper and lower sets and pulling them apart as hard as possible after a new shed was formed, to force the point of crossing down on the pick just placed and thus drive it close to the completed web. After an inch of fabric was woven, the tension on the warps

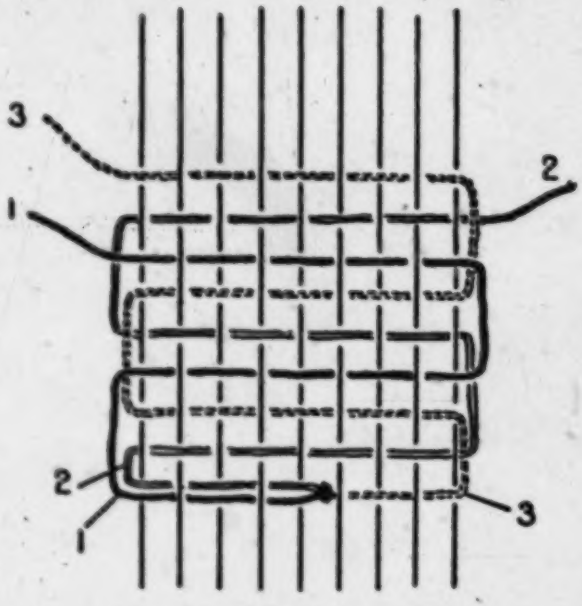


FIG. 10.—Wefting of cradle band

was lessened, to make forming the sheds easier, by resetting one warp bar inside the stakes.

Weaving was continued to about four inches of the further warp bar, just as it was begun that distance from the nearer bar. This allowed room for shedding up to that point. The band was then taken from the loom by cutting through the warps where they cross the bars. These unpicked ends were then fringes. The ends of the three wefts were not tied but allowed to lie with the

[23] Dr. L. M. O'Neale comments: "This is exactly what happens with us in working any kind of yarn the first few inches; perhaps [because of] the roughness of yarns; perhaps the not quite perfect adjustment to warp planes."

1:Spier E-5 (1929-1932) 1933 NT15 River Yumans NT15
Maricopa

PLATE IX

286

A

B

WEAVING

(*A*, Arranging the heald; *B*, pulling the wefts taut)

[p. 118 A]

1:Spier E-5 (1929-1932) 1933 NT15 River Yumans NT15
Maricopa

warps. They were cut off even with the warp-end fringes, then three or four of the outer warps were rolled with them on the thigh. Since I desired to acquire the uncompleted specimen, these final stages were not observed. In two specimens purchased, the fringes are twisted three to six together and sometimes knotted as well. 286

The designs on such bands were very simple: longitudinal and transverse lines. Since this is "warp weaving," in which the warps form the surface pattern, longitudinal lines predominate. Plate X shows cradle bands, which by their decoration indicate the sex of the cradled child.[14] [531] [854]

Blankets were woven in essentially the same way as the cradle bands. It is likely, however, that instead of warp weaving, these were in tapestry weave, i.e., with the soft fluffy weft completely concealing the warps, or in tabby weave, with the tension of the warp and weft about equal and each showing equally. At any rate they were much coarser fabrics, decorated only in the side selvages. The weaving was simple checkerboard with no twilling.

The blanket loom was the same as that described. The ground where the loom was to be erected was first prepared by spreading clean sand over it, or by sprinkling water, beating it hard and sweeping it. This was to prevent the fabric from being soiled. Four stakes, three inches in diameter and eighteen inches long, were driven six inches into the ground. Warp bars were bound near the top of the stakes with willow twigs. Both stakes and bars were prepared from the tough inner wood of the giant cactus.

The loom was warped exactly as the band loom, the warps crossing in figure-eight fashion. Normally only white yarns were used for blankets, but those who desired added several dyed warps (red and black) at each side to form decorative selvages. (This suggests that the technique was not tapestry weave, else the colored warps would not show.) Information conflicts here: Kutox, who was probably right, mentioned these colored borders, Last Star denied their existence. [531] [815]

The warps were fastened together at each end by a string

[14] Specimens in the Washington State Museum: *a*, 2-11913C; *b*, 2-11923; *c*, 11914D.

1:Spier E-5 (1929-1932) 1933 NT15 River Yumans NT15
Maricopa

286 twined through them close to the warp bar, so that the whole set of warps could be lifted as a unit from the warp bars. The warp bars were then replaced to serve as loom bars, to which the warp was bound by a cord running about the loom bar and the previously-mentioned twined string (loom-string).

Shedding was accomplished with the aid of a weaving sword and a single heald, according to Last Star. The flat wooden sword was inserted between upper and lower sets of warps: setting it on edge raised the even warps. The sword being short, it was pushed across the warps as needed. The odd threads were raised to form the countershed by means of a simple heald: an arrowweed stick the full width of the warps laid on the even threads and bound to the odd set by a series of loose loops. (This took the place of the loop E, Fig. 8; a stick being necessitated by the wide expanse of the warps that must be lifted each time.)

[115] According to confused information from Kutox, an arrowweed was placed on the warps near the end opposite that at which weaving was to begin, and to this the lower, odd threads were bound by loose loops. Beyond this a second arrowweed was placed on the warps and tied to each of the even threads of the upper set.

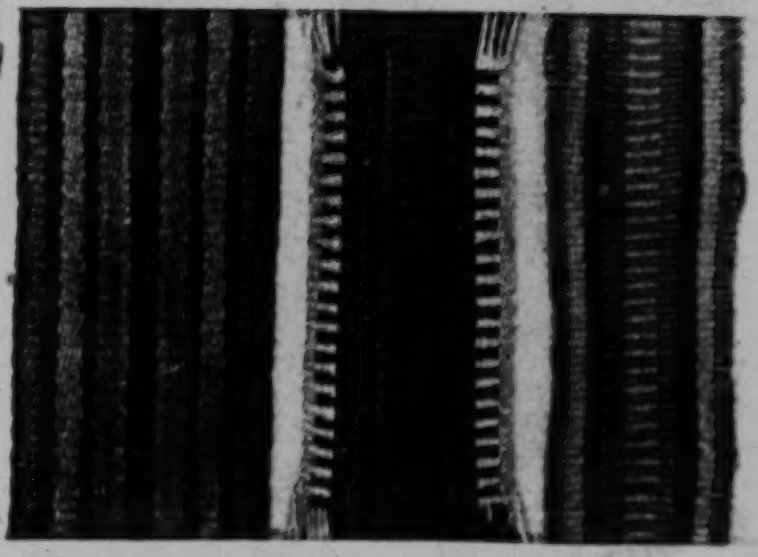
Wefting we begun where the two sets of warps crossed at the proximal end of the loom (presumably with such aids as the sticks *A* and *B*, Fig. 8). A single weft was used, carried back and forth through the sheds. It was turned once around each edge warp before returning to serve as the next pick, thus holding each pick firmly in place. (Extra warp strings beyond the edges of the warp proper, as in Zuñi weaving, were not used here.) When weaving exceptionally wide blankets, no attempt was made to place a pick across the entire width of the warp at one time: a shorter span was chosen, perhaps three before the entire width was traversed. A weaving sword of mesquite (a very hard wood) was used to ram home the picks. (It was withdrawn, not set on edge, between each new shedding, according to Kutox.) Weaving combs were unknown: instead, a pointed stick or weave dagger (six inches long) of tough ivasĕ' wood was inserted between the warps to move the picks into position.

The shuttle was simply a smooth arrowweed as long as the

1:Spier E-5 (1929-1932) 1933 NT15 River Yumans NT15
Maricopa

PLATE X

286
531
854



a b c

Woven Cradle Bands
(*a*, Girl's; *b*, boy's; *c*, sex unknown)

[FACING p. 121]

1:Spier E-5 (1929-1932) 1933 NT15 River Yumans NT15
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width of the blanket, flat at one end. The weft yarn was wound from one end to the other in a slightly spiral fashion, where it passed twice around the stick before returning to the first end. As more weft yarn was needed the free end of a full shuttle was tied to the end of the weft already in place. The weft was thus a single continuous strand. Two or more shuttles were never used simultaneously to deliver picks.

There was no device, such as a stretcher or temple, used to hold the warps at proper width against the narrowing pull of the weft. The informant insisted that the great tension of the warps obviated this tendency.

As weaving neared the farther warp bar, they began again at that end, leaving a narrow unpicked space between the two segments of finished fabric. The unpicked space was then filled with a weft yarn attached to a very slender, pointed, hard stick. Several men always helped at this because it was difficult to pull the weft through.

Blankets were repaired, not by sewing on a patch, but by darning the hole, as among the Pima. Sewing was wholly unknown to both these peoples.[15] The blanket was tied over the mouth of a pot so that the hole could be readily darned.

The glossary of terms employed in weaving is as follows:

atcu' or ɣõtcu', cotton
hatĕ'mpk, "spreads" (i.e., along the string), the process of picking up a sliver with the cotton-plucking bow
ĭctakwe'alc, spindle (from kwĭaĭ, to twirl) (the parts did not have individual names)
ackwi'a, to spin
ave'alc, warp yarn
asa'mc, weft
akwi'g or hĭkwi'k, weaving, also the whole loom
ɣõtcu'n,ĭtcami'c, warp bar

[15] Darning rather than patching may have been customary throughout the whole western American weaving area. Nordenskiöld remarks of the Chorotí and Ashluslay in the Gran Chaco: "The clothes, especially the women's clothes, are often darned. On the other hand, you never see them patched. To mend a hole by putting a patch over it seems to be unknown to the Indians throughout S. America, i.e., the Indians who have still kept their original culture. The Incas, too, did not patch, but darned their clothes" (*An Ethno-geographical Analysis*, p. 108).

1:Spier E-5 (1929-1932) 1933 NT15 River Yumans NT15
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192 vaxal,aθu'x, "counting the intestines," loom-string (the string by which this was later bound to the loom bar probably had no name)
286 xalyada'xk or caxĕ'kc, heald (the latter also the name of the weaving sword?)
n,lmákwe', shuttle
n,lmai'e'klc, "to draw together tightly," weaving sword
cak,i'xá, weave dagger (also the modern name for a match)
atcu'tltkwln,l'pc, "cotton cover," cotton blanket
cuxŏ'pa, woven belt
hapĕx, woven headband
tcuxwl'l or xa'i'p, woven cradle band

BASKETRY

285 415 439 The Maricopa manufactured only burden baskets, obtaining from the Pima the flat bowl-like baskets needed for winnowing or serving food. Every household had one of each, but rarely more.

FIG. 11.—Burden basket (from native drawing)

Today a Pima basket forms part of every woman's equipment and is highly prized. The Maricopa were a pottery using people: [171] where among the upland tribes of Arizona baskets were used for [323] every purpose, here were clay vessels in a dozen forms. This is the lower Colorado habit, where also baskets were obtained by trade rather than manufactured, and not much used. My informant stated at one time that neither Maricopa nor Halchidhoma made baskets, but this is surely not correct even for the latter.

285 The burden basket was in coiled technique, wide-mouthed and about as tall as wide. The base was flat, the sides flaring (Fig. 11). Unfortunately I failed to record the size, but from the manner of reference, I judge the basket about sixteen inches tall. The foundation of the coil was a bundle of finely split tule; the sewing

1:Spier E-5 (1929-1932) 1933 NT15 River Yumans NT15
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The rectangular baskets with lids in twilled, plaited weave and the sleeping mats made by the Pima[19] were not among Maricopa products. 285

VARIOUS TECHNIQUES AND TOOLS

Skin dressing.—Hides seem to have been but little used, not so much because deer and fur-bearing animals were rare, or that they were indifferent hunters, but because few articles were made of dressed skin. Correlatively the skin dressing process was rudimentary. Here again their habits coincide with the lower Colorado tribes. The upland tribes of Arizona were proficient workers in skins, those of the Colorado-Gila lowlands were not. 281 [171]

The uses of hides were few: the only uses cited were thongs, quiver, and shield. Rawhide sandals have come into use since cattle were obtained. [177]

A deer carcass was flayed by slitting down the belly from the neck, cutting along the inside of each leg, leaving the hoofs, but taking the head skin.

To tan the hide (k'wĭl,a), the flesh side was spread with parched seeds of the giant cactus fruit (the residue after a drink was made from it) and the skin folded with the flesh side in. This was to absorb the grease (?). When opportunity came to work the skin, it was first soaked in water. It was then slung over a smooth slanting pole and the flesh side scraped with a sharpened stick, not a stone. The hair was probably removed with a split bone scraper. The hide was then pounded with a stone while lying folded on a flat rock, available only in the mountains. When it was soft, it was further worked by rubbing with the hands. My informant had heard that deer brains were sometimes used for tanning. Pumpkin seeds were not used, as by the Cocopa, nor were skins smoked or dyed. Skins were also tanned with the hair on: fox, coyote, wolf, and mountain lion. (There were no bears in Maricopa territory.) Skin dressing (k'wĭ'ltâ-mavĭstcu'm, "hide softening") was the work of men alone. [412] [136] [462]

Willow bark blankets may have been made, but it is very doubtful. Kutox described these, called xacĭl,ĕ'p, as made by 286

[19] Russell, *op. cit.*, pp. 93, 134, 145, 147.

1:Spier E-5 (1929-1932) 1933 NT15 River Yumans NT15
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286 older women. The willow bark was stripped from the base of the tree upward, after a fire had been built near it to soften the bark so that long strips might be obtained. This bark was used for a wide variety of purposes and always prepared in the same fashion. It was soaked in water for three weeks, then the inner, finer layers could be stripped off.

My account of bark blanket weaving is very uncertain: the aged informant had never seen one made. Warps and weft were both rolled bark cords. It was said that the warps were doubled to hang over a horizontally suspended bar, the wefts being inserted first at the lower ends of the warps, and the whole closely woven. It was unknown how the lower ends of the warps were held: unless they were held, beginning at the bottom seems impossible. When the weaving reached the upper end, the bar was pulled out. It seems much more likely that the weft was twined, provided such fabrics were made at all. Last Star emphatically denied this, and it is quite possible that the foregoing is a misunderstood description of the making of a woman's bark skirt.

Woven bags (xal,ămĕ'c) were made to hold valuables, such as beads.[20] These were said to have been globular and closely woven with cotton yarn wefts and warps. Further details have been forgotten.

Carrying devices.[21]—The pack strap and the carrying net of 482 southern California were unknown,[22] women usually carrying loads unsupported on their heads, men on their shoulders. Where need arose articles might be transported by a woman in a blanket, the corners of which were tied together and resting on her forehead, or tied around her waist so that the package rested on the small of her back. A substitute for the blanket readily 285 made to carry home mesquite beans was a temporary mat of 482 arrowweed, called tcultcl'tc. The weeds were placed thickly on the ground, their stems alternately in opposite directions, and willow twigs twined through at each end, and, if the mat was large, through the middle as well. The corners were drawn together and tied as with a blanket.

283 Heavy ropes were also made to tie up fire wood and the like.
482

[20] Cf. the Mohave (Kroeber, *Handbook*, p. 738).

[21] See also p. 330 for carrying habits.

[22] Also the netted carrying frames of Pima and Mohave and the net bags of the Pima.

1:Spier E-5 (1929-1932) 1933 NT15 River Yumans NT15
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The *mush stirrer* (cu.ŭ'n) was simply three or four arrowweeds, dressed and held by loose twining at the handle end. Their lower ends were then trimmed off even (Pl. XIV, *d*).[29] 415

A *broom* (n,imama'l) was simply a large bundle of arrowweeds bound at one end. [412]

Temporary cups and bowls were sometimes fashioned by hollowing out small barrel cacti when travelling.

The *rabbit net* (ca'a'k) was a purse net set in the runway. It was about a yard square. A stout cord threaded through all four edges was attached to a stake. The rabbit dashing into the net, spread open on the bushes, pursed it and was held fast by the stake. The cordage for the net was rolled of the strings of black-eyed pea pods. The net was made on a loop foundation (at upper left corner, Pl. XI). Twenty-five or thirty meshes formed the first row: these tied together (?) were called an ear (smalk). No net gauge was used. 224 286 [293]

Flageolet.—This instrument was used in lovemaking, but not as an accompaniment to song. "A boy was certain to get a girl if he used it." It was a large reed, up to two feet in length, so chosen that it was formed of two internodal sections with a single node or septum between, both ends then being open. Small holes were made on each side of the node so that it could be pierced, perhaps slotted between these holes. In addition, four finger holes were made near the distal end of the flageolet. To play it, one blew into the open proximal end which was held between the lips; the forefinger of the left hand partially covered the holes at the node to serve as a reed, while the fingers of the other hand lay on the holes near the distal end. The instrument was called w'ilw'i'l or less properly taltal. 534 [832]

WEAPONS

Armament for the Maricopa consisted of bows, short wooden clubs, and small circular shields. A special pike was carried by the battle leader alone; rarely other men armed themselves with simple wooden pikes. Armor, pole-length clubs, and stone headed clubs, all used in this area, were unknown. The Maricopa 411

[29] No. 2-11874.

2:Bartlett G-5 (1850-1853) 1854
NT15 River Yumans NT15
Pima N429

and bodies in the task. I have seen women thus employed when the thermometer stood at 110°, while their lords lay stretched out at length on their backs looking on.

Water is invariably brought by the women in large earthen vessels upon their heads resting upon a small cushion. Some of these vessels hold six gallons. This mode of carrying burdens, by which the body is kept in a perfectly erect position, tends greatly to develope the chest and add to the general beauty of the figure. Hence we see among the Indians, as well as among the lower class of Mexicans, forms which Walker might well have taken for models in his "Analysis of Beauty in Women."

As the manners and customs of the Pimos and Coco-Maricopas are the same, with the exception of their rites of burial, I shall include both in describing these customs; although there is little doubt but that the knowledge of the arts which they possess originated with the Pimos. Cotton is raised by them,* which they spin and weave. Their only manufactures consist of blankets of various textures and sizes; a heavy cloth of the same material used by the women to put around their loins; and an article from three to four inches wide, used as a band for the head, or a girdle for the waist. The blankets are woven with large threads, slightly twisted and without any nap. They are made of white cotton, and are without ornament of colors or figures, save a narrow selvage of buff.

* I brought home with me the seeds with samples of this cotton, which was pronounced equal to the best Sea Island. The seeds I distributed among various planters.

2:Bartlett G-5 (1850-1853) 1854
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The implements used by these tribes for spinning and weaving are of the most primitive character. A slender stick about two feet long passing through a block of wood which serves to keep up the momentum imparted to it, constitutes the spindle. One end of this rests on a wooden cup inserted between the toes,

Indian weaving.

and the other is held and twirled by the fingers of the right hand; while the left hand is occupied in drawing out the thread from the supply of cotton, which is coiled upon the left arm in loose rolls.

In weaving, the warp is attached to two sticks, and

2:Bartlett G-5 (1850-1853) 1854
NT15 River Yumans NT15
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RY P 286 stretched upon the ground by means of stakes. Each alternate thread of the warp is passed round a piece of cane, which, being lifted, opens a passage for the shuttle in the manner of a sley. The operator sits in the fashion of a tailor, and, raising the sley with one hand, with the other passes the shuttle, which is simply a pointed stick with the thread wound upon it, between the threads of the warp. The work is beaten up after the passage of each thread by the use of a sharp smooth-edged instrument made of hard wood. The operation of course progresses slowly; and from the length of RY P time consumed in spinning and weaving, they set a high price upon their blankets, asking for them ten or [887] twelve dollars in money, or a new woollen blanket of [435] equal size. The weaving is generally done by the old men.

P RY 286 291 The head-band or girdle consists of a white ground with a variety of figures of red, blue, and buff. The figures are angular, and, though they present a great variety, are all of one general character. The colored portions of these belts are made of wool, and the colors are quite brilliant. On examining the patterns on these bands, one is struck with their general resemblance to the figures on the ancient pottery found among the ruins of this country, a comparison with which will be made hereafter.

RY P 323 415 The pottery made by these tribes is all red or dark brown, the latter a blending of black and red. The articles made are very limited, though, perhaps, quite sufficient for their wants. In fact, they are the same as those made and in use by the Mexicans. They consist of ollas, or vases, of every size, the largest holding